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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.     | CONFIRMATION NO.       |
|--|-------------|----------------------|-------------------------|------------------------|
| 09/963,689   | 09/27/2001  | Lisa Denney          | 1875.0480000            | 8993                   |
| 26111 7590 10/25/2007<br>STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.<br>1100 NEW YORK AVENUE, N.W.<br>WASHINGTON, DC 20005 |             |                      | EXAMINER<br>PHAN, MAN U |                        |
|  |             |                      | ART UNIT<br>2619        | PAPER NUMBER           |
|  |             |                      | MAIL DATE<br>10/25/2007 | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/963,689

Applicant(s)

DENNEY ET AL.

Examiner

Man Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

***DETAILED ACTION***

1. This communication is in response to applicant's 08/13/2007 Amendment in the application of Denney et al. for the "Method and system for upstream priority look up at physical interface" filed 09/27/2001. This application is a Request for Continued Examination (RCE) under 37 C.F.R. 1.114 filed on August 13, 2007. The proposed amendments to the claims have been entered and made of record. Claims 1-33 are pending in the application.

2. The applicant should use this period for response to thoroughly and very closely proof read and review the whole of the application for correct correlation between reference numerals in the textual portion of the Specification and Drawings along with any minor spelling errors, general typographical errors, accuracy, assurance of proper use for Trademarks <sup>TM</sup>, and other legal symbols @, where required, and clarity of meaning in the Specification, Drawings, and specifically the claims (i.e., provide proper antecedent basis for "the" and "said" within each claim). Minor typographical errors could render a Patent unenforceable and so the applicant is strongly encouraged to aid in this endeavor.

***Claim Rejections - 35 USC ' 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention

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was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 26, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nazarathy et al. (US#6,490,727) in view of Tsao et al. (US#2002/0131413).

With respect to claims 26, 27, Nazarathy et al. (US#6,490,727) and Tsao et al. (US#2002/0131413) disclose a novel system and method for classifying and prioritizing signals at the physical interface of a headend device, according to the essential features of the claims. Nazarathy et al. (US#6,490,727) discloses in Figs. 10-11 block diagrams illustrated methods and systems for controlling communications traffic across an upstream traffic channel at a headend of a cable modem termination system (CMTS), including a burst receiver, a spectrum analyzer for analyzing data stream received by the burst receiver, and a media access controller interface that receives a command from a media access controller, wherein the spectrum analyzer provides a spectral analysis of a packet received by the burst receiver and corresponding to a subscriber ID (SID) provided by the command from the media access controller (Col. 9, lines 54 plus).

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However, Nazarathy does not disclose expressly the classifier for detecting an identifier, which is matched to a priority indicator. In the same field of endeavor, Tsao et al. (US#2002/0131413) teaches in Figs 1 & 2 the diagrams illustrated the method for scheduling a packet, comprises receiving a packet; identifying a flow for the packet; classifying the packet based on the identified flow; and buffering the packet in one of a plurality of queues based on the classification of the packet (priority storage) ([0007]-[0008]). Packet arrival module 106 receives packets from input port 102, identifies each packet's flow, and places each packet in its corresponding flow queue. Packet arrival module 106 determines the number n and identification of flow queues 112.sub.1-112.sub.n based upon information received from packet departure module 110 via path 124. Packet arrival module 106 may also provide notification, e.g., to packet departure module 110 via processor 104, when a packet arrives for a new flow to be serviced by node 100. Furthermore, packet arrival module 106 may notify pre-order queuing module 108, e.g., if there are no other packets for a particular flow. As shown in FIG. 1, packet arrival module 106 comprises a set of flow queues 112-112.sub.n, where n is the number of flows currently being serviced by node 100. Packet arrival module 106 may be implemented using any combination of hardware logic and software. Packet arrival module 106 may use processing functions of processor 104 to execute instructions in software. Below is one example of pseudo-code called "PKT\_Arrival" which may be used by packet arrival module 106 to place each packet into its corresponding flow F<sub>q</sub> (i.e., one of flow queues 112.sub.1-112.sub.n) ([0026]-[0051]). Tsao et al. (US#2002/0131413) further teaches in Fig. 2 for scheduling packets comprising the steps of: receiving a packet; identifying a flow for the packet; classifying the packet based on the identified flow; and buffering the packet in one of a plurality of queues

(*priority queues*) based on the classification of the packet (*the process of determining a priority classification*). In general, cable modem scheduler is responsible for multiplexing the internal traffic, (i.e., requesting the necessary bandwidth that cable modem needs to transfer its current types of data). Cable modem scheduler must take into consideration the different priorities given to the current data to be transferred and to request bandwidth from CMTS accordingly.

It's noted that in the upstream direction of CMTS communication, priority rules are applied to the packets of individual TCP connections at the entry point to the TCP spoofing kernel. These rules allow a customer to control which spoofed applications have higher and lower priority access to spoofing resources. Upstream prioritization is also applied before forwarding packets to the WAN. This allows a customer to control the relative priority of spoofed TCP connections with respect to unspoofed TCP connections and non-TCP traffic (as well as to control the relative priority of these other types of traffic with respect to each other).

One skilled in the art would have recognized the need for classifying and prioritizing signals at the physical interface of a headend device, and would have applied Tsao's teaching of the priority order in scheduling packets into Nazarathy's novel use upstream burst receiver in managing traffic in a communications channel. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Tsao's method and apparatus for scheduling for packet-switched networks into Nazarathy's distributed termination system for two-way hybrid networks with the motivation being to provide a method and system for controlling the communications traffic across an upstream traffic channel at a headend of a cable modem termination system (CMTS).

6. Claims 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nazarathy et al. (US#6,490,727) in view of Tsao et al. (US#2002/0131413) as applied to the claims above, and further in view of McConnell et al. (US#6,108,307).

With respect to claims 28, 29, Nazarathy et al. (US#6,490,727) and Tsao et al. (US#2002/0131413) disclose the claimed limitations discussed in paragraph 5 above. However, these claims differ from the claims above in that the claims require the feature wherein the priority storage includes a lookup table with records of all assigned IDs. In the same field of endeavor, McConnell et al. (US#6,108,307) discloses in Fig. 3 a schematic block diagram illustrated a frame service device for the allocation of messages into multiple queues, in which frame processor 46 having a frame input port 44. The frame processor 46 receives each message frame from the network via the frame input port 44. When a frame arrives, the frame processor reads the DLCI bits 30 in address field 15 of the frame message. The frame processor accesses a lookup table 47 located in memory space 48 in order to assign a predetermined priority level for a message having the DLCI of the message received by the frame processor 46 (Col. 2, lines 33 plus and Col. 5, lines 48 plus).

Regarding claims 30-33, McConnell further teaches in Fig. 4 a flow chart showing the frame allocation steps of multiple priority queuing, in which at step 68, the priority queues (Q1-Q4) associated with priority order (P1-P4) (Col. 6, lines 12 plus). As shown in Figs. 3 & 4, four queues are implemented, which each correspond to a particular class of service associated with the virtual connections of the network node to which the frame processing apparatus 43 pertains. For instance, the queues 50, 52, 54, 56 may respectively represent high priority, medium priority, low priority and best effort priority levels, respectively. The high priority

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level will be associated with Frame Relay connections whose service class will only be permitted to degrade last if congestion occurs. The best effort priority level pertains to Frame Relay connections whose service class will be permitted to degrade first if network congestion occurs. The intermediate priority levels will therefore relate to Frame Relay connections having intermediate service classes. Where the Frame Relay connections are mapped to equivalent quality of service parameters on an ATM backbone, the medium priority level may be associated with Frame Relay connections which will use a non-real time Variable Bit Rate (nrt-VBR) quality of service, if available. Similarly, the low priority level may be associated with a Frame Relay connection utilizing an Available Bit Rate (ABR) quality of service on the backplane, if available. In whatever manner the priority levels are assigned to the various Frame Relay connections for a node, the assigned priority levels are stored in lookup table 47 of frame processing apparatus 43 (Col. 6, lines 25 plus).

Regarding claims 1-25, they are method claims corresponding to the system claims 26-33 above. Therefore, claims 1-25 are analyzed and rejected as previously discussed with respect to claims 26-33.

One skilled in the art would have recognized the need for classifying and prioritizing signals at the physical interface of a headend device, and would have applied McConnell's priority queue associated with priority order, and Tsao's teaching of the priority order in scheduling packets into Nazarathy's novel use upstream burst receiver in managing traffic in a communications channel. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply McConnell's frame relay priority queues to offer multiple service classes, and Tsao's method and apparatus for scheduling for



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packet-switched networks into Nazarathy's distributed termination system for two-way hybrid networks with the motivation being to provide a method and system for controlling the communications traffic across an upstream traffic channel at a headend of a cable modem termination system (CMTS).

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Quigley et al. (US#7,120,123) is cited to show the pre-equalization technique for upstream communication between cable modem and headend.

The McKinnon, III et al. (US#7,184,398) is cited to show the allocating access across shared communications medium to user classes.

The Laubach et al. (US#6,028,860) is cited to show the prioritized virtual connection transmissions in a packet to ATM cell cable network.

The Gorman et al. (US#2003/0021237) is cited to show the receiver having integrated spectral analysis capability.

The Sala et al. (US#6,137,793) is cited to show the reverse path multiplexer for use in high speed data transmission.

The Buchholz et al. (US#6,198,750) is cited to show the ATM access interface: hardware based quick response flow control.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The

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examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

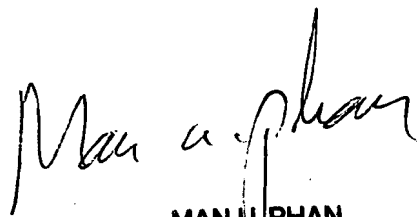
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel, can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-9197.

Mphan

10/24/2007

  
MAN U. PHAM  
PRIMARY EXAMINER